

### **AMENDMENTS TO THE CLAIMS**

*This listing of claims will replace all prior versions and listings of claims in the application.*

#### **LISTING OF CLAIMS**

1. (Canceled)

2. (Currently Amended) A braking force distribution control device comprising:

wheel speed detecting means for detecting wheel speeds of respective wheels of a vehicle;

road surface  $\mu$  slope estimating means for, on the basis of the detected wheel speeds, estimating for the respective wheels slopes of a coefficient of friction  $\mu$  between the wheels and a road surface as road surface  $\mu$  slopes;

control means for, on the basis of the road surface  $\mu$  slopes estimated for the respective wheels by the road surface  $\mu$  slope estimating means, distributing braking forces to the respective wheels by controlling the braking force of each wheel; and

wherein on the basis of the detected wheel speeds, the road surface  $\mu$  slope estimating means estimates slopes of braking forces with respect to wheel slip speeds as the road surface  $\mu$  slopes for the respective wheels, and the control means controls a braking torque of a wheel which is an object of control ~~on the basis of~~ using the road surface  $\mu$  slope of the wheel which is an object of control and the road surface  $\mu$  slope of a reference wheel among the road surface  $\mu$  slopes estimated by the road surface  $\mu$  slope estimating means.

3. (Previously Presented) A braking force distribution control device according to claim 2, wherein in a case in which a front wheel is the reference wheel and a rear wheel is the wheel which is the object of control, when a variation between the road surface  $\mu$  slope of the front wheel and the road surface  $\mu$  slope of the rear wheel is greater than a first predetermined value, the control means increases the braking torque of the rear wheel, and when the variation is less than a second predetermined value, the control means reduces the braking torque of the rear wheel.

4. (Previously Presented) A braking force distribution control device according to claim 3, wherein the control means carries out select-low control in accordance with, among the two rear wheels, the wheel which has the lower road surface  $\mu$  slope or the wheel which has the lower braking torque.

5. (Previously Presented) A braking force distribution control device according to claim 2, wherein in a case in which a rear wheel is the reference wheel and a front wheel is the wheel which is the object of control, when a variation between the road surface  $\mu$  slope of the front wheel and the road surface  $\mu$  slope of the rear wheel is greater than a first predetermined value, the control means increases the braking torque of the front wheel, and when the variation is less than a second predetermined value, the control means reduces the braking torque of the front wheel.

6. (Previously Presented) A braking force slope distribution device according to claim 2, wherein in a case in which a turning inner side wheel is the reference wheel and a turning outer side wheel is the wheel which is the object of control, when a variation between the road surface  $\mu$  slope of the turning inner side wheel and the road surface  $\mu$  slope of the turning outer side wheel is greater than or a first predetermined value, the control means increases the braking torque of the turning outer side wheel, and when the variation is less than a second predetermined value, the control means reduces the braking torque of the turning outer side wheel.

7. (Previously Presented) A braking force distribution control device according to claim 2, wherein in a case in which a turning outer side wheel is the reference wheel and a turning inner side wheel is the wheel which is the object of control, when a variation between the road surface  $\mu$  slope of the turning outer side wheel and the road surface  $\mu$  slope of the turning inner side wheel is greater than or a first predetermined value, the control means increases the braking torque of the turning inner side wheel, and when the variation is less than a second predetermined value, the control means reduces the braking torque of the turning inner side wheel.

8. (Previously Presented) A braking force distribution control device according to claim 2, wherein the control means controls the braking torque by using one of a turning inner side front wheel, a turning outer side front wheel, a turning inner side rear wheel, and a turning outer side rear wheel as the reference wheel, and using at least one other wheel as the wheel which is the object of control.

9. (Canceled)

10. (Canceled)

11. (Canceled)

12. (Canceled)

13. (Canceled)

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Canceled)

18. (New) A braking force distribution control device comprising:  
wheel speed detecting means for detecting wheel speeds of respective  
wheels of a vehicle;  
road surface  $\mu$  slope estimating means for, on the basis of the detected wheel  
speeds, estimating for the respective wheels slopes of a coefficient of friction  $\mu$   
between the wheels and a road surface as road surface  $\mu$  slopes;

control means for, on the basis of the road surface  $\mu$  slopes estimated for the respective wheels by the road surface  $\mu$  slope estimating means, distributing braking forces to the respective wheels by controlling the braking force of each wheel; and

wherein on the basis of the detected wheel speeds, the road surface  $\mu$  slope estimating means estimates slopes of braking forces with respect to wheel slip speeds as the road surface  $\mu$  slopes for the respective wheels, and the control means determines a relationship between the road surface  $\mu$  slope of a wheel which is an object of control and the road surface  $\mu$  slope of a reference wheel, and controls a braking torque of the wheel which is the object of control taking into account said relationship.

19. (New) A braking force distribution control device according to claim 18, wherein in a case in which a front wheel is the reference wheel and a rear wheel is the wheel which is the object of control, when a variation between the road surface  $\mu$  slope of the front wheel and the road surface  $\mu$  slope of the rear wheel is greater than a first predetermined value, the control means increases the braking torque of the rear wheel, and when the variation is less than a second predetermined value, the control means reduces the braking torque of the rear wheel.

20. (New) A braking force distribution control device according to claim 19, wherein the control means carries out select-low control in accordance with, among the two rear wheels, the wheel which has the lower road surface  $\mu$  slope or the wheel which has the lower braking torque.

21 (New) A braking force distribution control device according to claim 18, wherein in a case in which a rear wheel is the reference wheel and a front wheel is the wheel which is the object of control, when a variation between the road surface  $\mu$  slope of the front wheel and the road surface  $\mu$  slope of the rear wheel is greater than a first predetermined value, the control means increases the braking torque of the front wheel, and when the variation is less than a second predetermined value, the control means reduces the braking torque of the front wheel.

22 (New) A braking force slope distribution device according to claim 18, wherein in a case in which a turning inner side wheel is the reference wheel and a turning outer side wheel is the wheel which is the object of control, when a variation between the road surface  $\mu$  slope of the turning inner side wheel and the road surface  $\mu$  slope of the turning outer side wheel is greater than or a first predetermined value, the control means increases the braking torque of the turning outer side wheel, and when the variation is less than a second predetermined value, the control means reduces the braking torque of the turning outer side wheel.

23. (New) A braking force distribution control device according to claim 18, wherein in a case in which a turning outer side wheel is the reference wheel and a turning inner side wheel is the wheel which is the object of control, when a variation between the road surface  $\mu$  slope of the turning outer side wheel and the road surface  $\mu$  slope of the turning inner side wheel is greater than or a first predetermined value, the control means increases the braking torque of the turning

inner side wheel, and when the variation is less than a second predetermined value, the control means reduces the braking torque of the turning inner side wheel.

24. (New) A braking force distribution control device according to claim 18, wherein the control means controls the braking torque by using one of a turning inner side front wheel, a turning outer side front wheel, a turning inner side rear wheel, and a turning outer side rear wheel as the reference wheel, and using at least one other wheel as the wheel which is the object of control.

25. (New) A braking force distribution control device comprising:  
wheel speed detecting means for detecting wheel speeds of respective wheels of a vehicle;

road surface  $\mu$  slope estimating means for, on the basis of the detected wheel speeds, estimating for the respective wheels slopes of a coefficient of friction  $\mu$  between the wheels and a road surface as road surface  $\mu$  slopes;

control means for, on the basis of the road surface  $\mu$  slopes estimated for the respective wheels by the road surface  $\mu$  slope estimating means, distributing braking forces to the respective wheels by controlling the braking force of each wheel; and

wherein on the basis of the detected wheel speeds, the road surface  $\mu$  slope estimating means estimates slopes of braking forces with respect to wheel slip speeds as the road surface  $\mu$  slopes for the respective wheels, and the control means controls a braking torque of a wheel which is an object of control by taking into account a difference between the road surface  $\mu$  slope of the wheel which is the

object of control and the road surface  $\mu$  slope of a reference wheel among the road surface  $\mu$  slopes estimated by the road surface  $\mu$  slope estimating means.

26. (New) A braking force distribution control device according to claim 25, wherein in a case in which a front wheel is the reference wheel and a rear wheel is the wheel which is the object of control, when the difference between the road surface  $\mu$  slope of the front wheel and the road surface  $\mu$  slope of the rear wheel is greater than a first predetermined value, the control means increases the braking torque of the rear wheel, and when the difference is less than a second predetermined value, the control means reduces the braking torque of the rear wheel.

27. (New) A braking force distribution control device according to claim 26, wherein the control means carries out select-low control in accordance with, among the two rear wheels, the wheel which has the lower road surface  $\mu$  slope or the wheel which has the lower braking torque.

28 (New) A braking force distribution control device according to claim 25, wherein in a case in which a rear wheel is the reference wheel and a front wheel is the wheel which is the object of control, when the difference between the road surface  $\mu$  slope of the front wheel and the road surface  $\mu$  slope of the rear wheel is greater than a first predetermined value, the control means increases the braking torque of the front wheel, and when the difference is less than a second



predetermined value, the control means reduces the braking torque of the front wheel.

29 (New) A braking force slope distribution device according to claim 25, wherein in a case in which a turning inner side wheel is the reference wheel and a turning outer side wheel is the wheel which is the object of control, when the difference between the road surface  $\mu$  slope of the turning inner side wheel and the road surface  $\mu$  slope of the turning outer side wheel is greater than or a first predetermined value, the control means increases the braking torque of the turning outer side wheel, and when the difference is less than a second predetermined value, the control means reduces the braking torque of the turning outer side wheel.

30. (New) A braking force distribution control device according to claim 25, wherein in a case in which a turning outer side wheel is the reference wheel and a turning inner side wheel is the wheel which is the object of control, when the difference between the road surface  $\mu$  slope of the turning outer side wheel and the road surface  $\mu$  slope of the turning inner side wheel is greater than or a first predetermined value, the control means increases the braking torque of the turning inner side wheel, and when the difference is less than a second predetermined value, the control means reduces the braking torque of the turning inner side wheel.